

1 **HYDRAULIC BRAKE LEVER FOR A BICYCLE**

2 **BACKGROUND OF THE INVENTION**

3 1. Field of the Invention

4 The present invention relates to a hydraulic brake lever for a bicycle,
5 and more particularly to a hydraulic brake lever for a bicycle, wherein the
6 hydraulic brake lever can be operated conveniently and smoothly, thereby
7 facilitating the rider operating the hydraulic brake lever.

8 2. Description of the Related Art

9 A conventional hydraulic brake lever for a bicycle has the following
10 disadvantages.

11 1. The conventional hydraulic brake lever is not sensitive, so that it
12 cannot be operated conveniently.

13 2. The conventional hydraulic brake lever cannot be operated
14 smoothly under the emergency condition, thereby causing danger to the rider.

15 3. The tension of the conventional hydraulic brake lever cannot be
16 adjusted easily and conveniently, thereby causing inconvenience to the rider.

17 **SUMMARY OF THE INVENTION**

18 The present invention is to mitigate and/or obviate the disadvantage
19 of the conventional hydraulic brake lever for a bicycle.

20 The primary objective of the present invention is to provide a
21 hydraulic brake lever for a bicycle, wherein the hydraulic brake lever can be

1 operated conveniently and smoothly, thereby facilitating the rider operating the
2 hydraulic brake lever.

3 Another objective of the present invention is to provide a hydraulic
4 brake lever for a bicycle, wherein the hydraulic brake lever is sensitive,
5 thereby protecting the rider's safety.

6 A further objective of the present invention is to provide a hydraulic
7 brake lever for a bicycle, wherein the operation stroke of the brake can be
8 changed and adjusted conveniently, so as to adjust the sensitivity of the brake
9 to the optimum state.

10 In accordance with the present invention, there is provided a
11 hydraulic brake lever for a bicycle, comprising a main body, a pull handle, and
12 an adjusting mechanism, wherein:

13 the main body has an inside formed with a hydraulic oil tank, the
14 main body has a bottom provided with a cylinder connected to the hydraulic oil
15 tank, the main body includes a press rod slidably mounted in the cylinder;

16 the pull handle has a front end pivotally mounted on the main body;
17 and

18 the adjusting mechanism is mounted on the front end of the pull
19 handle and includes an adjusting wheel rotatably mounted on the pull handle, a
20 threaded rod screwed in the adjusting wheel, and an adjusting rod secured
21 between a distal end of the threaded rod and a distal end of the press rod of the
22 main body.

Further benefits and advantages of the present invention will become apparent after a careful reading of the detailed description with appropriate reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is an exploded perspective assembly view of a hydraulic brake lever for a bicycle in accordance with the preferred embodiment of the present invention;

Fig. 2 is a perspective assembly view of the hydraulic brake lever for a bicycle in accordance with the preferred embodiment of the present invention;

Fig. 3 is a partially cut-away side plan cross-sectional view of the hydraulic brake lever for a bicycle as shown in Fig. 2;

Fig. 4 is a schematic operational view of the hydraulic brake lever for a bicycle as shown in Fig. 2 in adjustment;

Fig. 5 is a schematic operational view of the hydraulic brake lever for a bicycle as shown in Fig. 3 in use; and

Fig. 6 is a schematic perspective view showing the hydraulic brake lever being mounted on the handlebar of the bicycle.

DETAILED DESCRIPTION OF THE INVENTION

Referring to the drawings and initially to Figs. 1-3, a hydraulic brake lever 10 for a bicycle in accordance with the preferred embodiment of the present invention is mounted on the handlebar 50 (see Fig. 6) of the bicycle

1 and comprises a main body 11, a pull handle 20, and an adjusting mechanism
2 60.

3 The main body 11 has an irregular shape. The main body 11 has an
4 inside formed with a hydraulic oil tank 110. The hydraulic brake lever 10
5 further comprises a cover 112 mounted on a top of the main body 11 to
6 encompass the hydraulic oil tank 110 of the main body 11, and a leakproof
7 washer 111 mounted between the cover 112 and the top of the main body 11 to
8 provide an air seal effect. The main body 11 has a bottom provided with a
9 cylinder 12 connected to the hydraulic oil tank 110. The main body 11 includes
10 a press rod 121 slidably mounted in the cylinder 12. The main body 11 has a
11 side provided with a semi-circular clamping block 16. In addition, the cylinder
12 12 is provided with a protruding pivot base 13.

13 The hydraulic brake lever 10 further comprises a semi-circular
14 clamping body 40 combined with the clamping block 16 of the main body 11,
15 thereby defining a circular receiving hole 400 between the clamping body 40
16 and the clamping block 16 of the main body 11 for mounting the handlebar 50
17 (see Fig. 6) of the bicycle.

18 The pull handle 20 is pivotally mounted on the main body 11. The
19 pull handle 20 has a front end 22 pivotally mounted on the pivot base 13 of the
20 main body 11 by a pivot shaft 30. The front end 22 of the pull handle 20 is
21 provided with a cylindrical receiving seat 24 having an inside formed with a
22 receiving chamber 240 and having a peripheral wall formed with a receiving

1 groove 242 communicating with the receiving chamber 240. In addition, the
2 front end 22 of the pull handle 20 is formed with an oblong slide slot 220.

3 The adjusting mechanism 60 is mounted on the pull handle 20. The
4 adjusting mechanism 60 includes an adjusting wheel 61 rotatably mounted in
5 the receiving groove 242 of the receiving seat 24 of the pull handle 20, a
6 threaded rod 62 movably mounted in the receiving chamber 240 of the
7 receiving seat 24 of the pull handle 20 and screwed in the adjusting wheel 61,
8 and an adjusting rod 64 secured between a distal end of the threaded rod 62 and
9 a distal end of the press rod 121 of the main body 11. The adjusting wheel 61 is
10 formed with a screw bore 610 screwed on the threaded rod 62. The distal end
11 of the threaded rod 62 is formed with a positioning hole 620 for securing a first
12 end of the adjusting rod 64, and the distal end of the press rod 121 of the main
13 body 11 is formed with a positioning hole 122 for securing a second end of the
14 adjusting rod 64.

15 The adjusting mechanism 60 further includes a locking block 63
16 slidably mounted in the slide slot 220 of the front end 22 of the pull handle 20
17 to lock the adjusting wheel 61 after adjustment.

18 In practice, referring to Figs. 1-6, when the user wishes to adjust the
19 sensitivity of the brake, the adjusting wheel 61 can be rotated as shown in Fig.
20 4. At this time, the threaded rod 62 is retained by the adjusting rod 64, so that
21 the threaded rod 62 will not be rotated by rotation of the adjusting wheel 61.
22 Thus, rotation of the adjusting wheel 61 will force the threaded rod 62 to move

1 linearly to press the adjusting rod 64 which presses the press rod 121 of the
2 main body 11 into the cylinder 12, so that the operation stroke of the brake can
3 be changed and adjusted, so as to adjust the sensitivity of the brake to the
4 optimum state.

5 In operation, the pull handle 20 can be pressed toward the main body
6 11, to press the adjusting rod 64 which presses the press rod 121 of the main
7 body 11 into the cylinder 12, so that the hydraulic oil contained in the hydraulic
8 oil tank 110 of the main body 11 can flow into the brake as shown in Fig. 5, so
9 as to operate the brake, thereby achieving a braking effect.

10 Accordingly, the hydraulic brake lever can be operated conveniently
11 and smoothly, thereby facilitating the rider operating the hydraulic brake lever.
12 In addition, the hydraulic brake lever is sensitive, thereby protecting the rider's
13 safety. Further, the operation stroke of the brake can be changed and adjusted
14 conveniently, so as to adjust the sensitivity of the brake to the optimum state.

15 Although the invention has been explained in relation to its preferred
16 embodiment(s) as mentioned above, it is to be understood that many other
17 possible modifications and variations can be made without departing from the
18 scope of the present invention. It is, therefore, contemplated that the appended
19 claim or claims will cover such modifications and variations that fall within the
20 true scope of the invention.

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